

# “N”AND “D” NOMINALIZATIONS

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**Abstract:** This paper addresses deverbal nominals denoting events (Complex Event Nominals or AS-Ns, Grimshaw 1990 and Borer 1999 respectively), that have been argued to convey aspectual information. I put a particular emphasis on French *-age* and *-ée* nominals, which have been argued to encode grammatical (im)perfective Aspect (Ferret et al. 2010, Knittel 2011). The aim is to contribute to a general syntactic theory of nominalizations involving aspectual projections, and to investigate their interaction with other, in particular categorizing, layers of structure. The analysis distinguishes between n-Nominalizations which involve derivational affixes introducing categorial information, and default D-Nominalizations in which the Determiner embeds aspectual (im)perfective morphology. I demonstrate that outer Aspect (an inflectional layer selecting verbalized structure) is only expected in the latter type of nominalizations, and that in the other cases, a relevant analysis should derive effects on the aspectual calculus by entailments at the level of a Classifier projection, specified in terms of +/-bounded, +/-count.

**Keywords:** nominalizations, mixed projections, categorization, aspect, plurality

## 1. Introduction

This paper addresses the issue of Aspect-projecting event nominalizations in general, with a particular emphasis on French *-age* and *-ée* nominals. My particular concern is to reach a general syntactic theory of nominalizations that involve aspectual projections, and the precise way in which these interact with other layers of structure, in particular with categorizing morphology. The present paper is a contribution to this general agenda.

It has recently been argued that Number and (outer) Aspect are somehow in complementary distribution in the system, on the basis of deverbal nominals that project imperfective outer Aspect but no Number (see Soare 2007, Iordăchioaia and Soare 2008, 2009, Alexiadou et al. 2010, Knittel 2011, Soare 2017). In this view, “Complex-Event” or Argument-structure Nominals (see Grimshaw 1990 and Borer (1999), respectively<sup>1</sup>) are not a homogeneous class, and exhibit different behaviours with respect to aspectual properties. These behaviours are correlated to distinct patterns of nominalizations and to the availability of morphological plural.

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<sup>1</sup> Grimshaw’s (1990) CENs, later re-labelled AS-Ns in the literature (see Borer 1999), are identified by several properties which oppose them to the class of Result (Grimshaw) or Referential (Borer) Nominals, which are well-known. For instance, AS-Ns unlike R-Ns have obligatory argument structure, allow aspectual modifiers, argumental *by*-phrases and *frequent*-modification in the singular, as illustrated in the contrast below (see Grimshaw 1990, Alexiadou 2001, Borer 1999, 2013, Roy and Soare 2012 a.o for details):

(i) The *frequent* building of social houses by the government for years was a good politics.  
(ii) This (*\*frequent*) huge building (*\*of social houses/\*by the government/\*for years*) is quite impressive.

Grimshaw’s (1990) Simple Event Nominals (SENs) are commonly assimilated to R-Ns from the point of view of their grammatical behavior, despite the fact that they denote conceptual events (see Roy and Soare 2013 for an overview and arguments concerning this point).

As is well known, there are differences between the various classes of English Gerunds in terms of their verbal/nominal properties. These have been recently argued (cf. Alexiadou et al. 2010 among others) to correlate to the “nominalizing” or “verbalizing” status of *-ing* (see also Borer 2005 for the idea that *-ing* may be either a nominalizer, or a kind of inflectional marker). When *-ing* is a nominalizer, more nominal properties are manifested – including adjectival modification and sometimes Number variation. Otherwise, it is a marker of outer Aspect (imperfective)<sup>2</sup>.

- (1) a. I am sick of her **constantly**/\***constant** criticizing me.  
 b. He could not tolerate her **constant**/\***constantly** criticizing of him.
- (2) a. \*He could not stand her **criticizings** me.  
 b. There have been several pushings of the cart by John

The idea of a correlation between Number and nominal layers – and between Aspect and the lack thereof – has been documented with more empirical support by Iordăchioaia and Soare (2008), who study a pair of productive nominalizations in Romanian – see (3) below. Iordăchioaia and Soare (2008) show that the availability of morphological Number in Romanian infinitive AS-Ns, as opposed to the supine nominals, depend on the lack of a grammatical Aspect projection, and the presence of a nominalizing layer. In turn, another, more verbal, pattern of nominalization is involved in the supine, which does project grammatical (imperfective) Aspect but no Number, as a result of the absence of this nominalizing layer.

- (3) **demolă-r-i-le** / \***demola-t-uri-le** frecvente ale cartierelor  
 demolish-INF-PL-the/ demolish-SUP-PL-the frequent-PL of quarters-GEN  
 vechi de către comuniști  
 old by communists  
 ‘the frequent demolitions of old quarters by the communists’

The existence of these two nominalizing patterns suggests that the projection of Number and the projection of outer Aspect are mutually exclusive. The projection of nominal layers depends on the existence of a nominalizer (n), further allowing a Classifier projection which introduces gender specification and [count] features. The “more verbal” nominalizing pattern is just default nominalization by placing a verbal projection in a nominal environment, i.e. complement of D. Thus the distribution of Number is related to the one of Outer Aspect, both being inflectional layers, one above n, the other in presence of verbal layers.

It has also been observed (by Roodenburg 2006) that French AS-Ns, contrary to one of Grimshaw’s generalizations, may allow plural, like in the example below:

<sup>2</sup> Actually, the general intuition has been already expressed in the literature since Chomsky (1970). See also Borer (2005) for a discussion of different types of *-ing*.

- (4) les désamorçages de bombes lourdes par des recrues (pour prouver  
 the defusing of bombs heavy by of recruits (for prove  
 l'efficacité du génie militaire)  
 the efficiency of the engineering military)

The example above involves an *-age* deverbal nominal, a class recently argued by Ferret et al (2010) to involve grammatical aspectual information, i.e. imperfectivity. One can note, for instance, the presence of aspectual PP-modifiers classically taken to be connected with aspectual information in the structure; above, *-age* and *-ée* nominals seem to instantiate an aspectual opposition, argued by Ferret et al (2010) to manifest outer Aspect, i.e. imperfectivity and perfectivity, respectively.

- (5) a. le perçage du tunnel pendant une semaine  
 the drilling of the tunnel for a week  
 b. la percée du tunnel en une semaine  
 the drilling of the tunnel in a week

The obvious problem with these nominals is that here, grammatical Aspect and nominal morphology, that allows for the projection of Number, would co-occur. Then the correlation stated in syntactic approaches like Iordachioaia and Soare (2008), Alexiadou et al. (2010) would not hold for French nominals, because of cases like (4). Another problem is that, when assuming outer Aspect in the nominal system, it would be expected to show up in contexts where a part of the verbal inflection is inherited in the nominal, i.e. cases of syntactic nominalization.

Other problematic cases of this type seem to exist. English *-ing* nominals have been argued to involve an imperfective (i.e. outer aspectual) value by Pustejovsky (1995), Siegel (1997), a view countered by Borer (2005). Following her view, aspect is not projected when *-ing* is a nominalizer; this is in line with Alexiadou et al.'s (2010) account which does not exclude the possibility of a bleached nominalizer *-ing*, accordingly allowing morphological plural. Alexiadou et al. (2010) also study the case of Polish *-cie/nie* nominals, which involve both aspectual and nominal affixes (see Rozwadowska 1997), and argue that the projection of Number is only blocked by the presence of outer imperfective Aspect (but not by perfective Aspect).

The broad question that I address in this paper is what pattern French nominalizations in *-age* and *-ée* follow in a syntactic account. To settle this issue, I will compare them with Romanian infinitive/supine nominalizations, which illustrate Number/Aspect competition, and with Polish *-cie/nie* nominalizations, where morphological aspectual marking is detectable. The following questions will be addressed: What is the best way to capture the apparently opposite properties of projecting both an n and Asp layer? Is it possible to maintain a syntactic analysis for these French nominalizations? What does it mean to have grammatical Aspect in the nominal domain, to begin with?

In my analysis, categorization arises from specific combinations of (grammatical) layers, namely layers involving gender/count/boundedness specifications, the presence/absence of which determine the structure; upwards, these layers feed inflectional

projections either specific to the nominal, or to the verbal domain; downwards, selectional restrictions apply on inner-aspectual/argument structure layers. This way, I build a classification system which is responsible for categorization, correlated to other semantic specifications. If this layer is absent, definite D provides default DP status and quantifies over another type of structure, e.g. verbal, AspP<sup>3</sup>.

The layers projected above in the inflectional domain of the structure will accordingly be either nominal inflection (Number) or verbal inflection (Aspect). In presence of an n layer brought in by pure nominalizers like *-ation*, *-age*, *-ment*, *-ée* in French, *-re* in Romanian, nominalizing *-ing* in English, etc, gender and count specifications are provided, and the projection of Number will follow. The combination of a +n Class with –bounded specification, and the projection of inner Aspect below, will give similar effects as the realization of grammatical Aspect in the inflectional domain of the projection, and block the projection of Number.

Importantly, there is really projection of “grammatical” Asp only in the “outer”, inflectional domain (hence, only above verbal layers and not above a nominal Class), and I claim that this happens when, and only when, a nominalizing layer is absent, as is the case in the Romanian Supine, in the English verbal Gerund, and possibly in a sub-class of Spanish and Italian nominalized infinitives. Verbal/nominal specifications in Class thus determine the functional categories that appear in the extended projection. My general point here is to throw some light on how categorial information is contributed in the structure, and its interaction with inflectional layers projected above.

The paper is organized as follows. I first present the two-nominalization-patterns system, and formulate generalizations about categorizing and functional morphology (section 2). I then address the challenge of mixed functional categories in nominalized projections, and sketch a map of the possible combinations of properties, with special attention to the Poss-*ing* English Gerund, the Romanian supine and the Polish imperfective nominalizations, then point some issues with French nominalizations (section 3).

I finally turn to a comparison of French nominalizations in *-age* and *-e* and Polish AS-Ns (section 4). I show that French nominalizations, unlike Polish nominalizations, do not contribute grammatical aspect by themselves, but are n-nominalizations with possible aspectual entailments.

## 2. Introducing N

In the following, I show that plural (and therefore the projection of Number) is only possible for those nominalizations that involve a genuine n-affix, a “pure nominalizer”, which determines the projection of Class. Number has even been taken by certain scholars to introduce the nominal category (see Alexiadou 2001); instead, I assume that it is correlated with /an effect of the presence of such a categorizing layer.

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<sup>3</sup> Obviously, we only deal here with deverbal nominalizations. The D vs. N pattern parameter, though, can probably extend to deadjectival nominalizations, cf. Fr/Romance *le beau* /vs/ *la beauté* ‘the beauty’. See a recent account of Spanish cases by Villalba (2013).

### 2.1. N in *-ing*

As is well known, the *-ing* affix in English gerunds is ambiguous in several ways. There is the “nominalizer *-ing*”, labeled as such by Borer 1993, 1999, and subsequent work, which gives rise to the “*ing-of*” Gerund (see, for instance, Abney 1987’s classification), a form that has nominal properties as attested by adjectival modification and absence of Accusative case assignment, unlike the “Poss-*ing*” in (6b) and the verbal “Acc-*ing*” gerund in (6c) which allow adverbial modification and assign Accusative case to its object.

- (6) a. The systematic /\*systematically destroying of ancient cities by the authorities for decades  
 b. The authorities’ \*systematic/systematically destroying ancient cities for decades  
 c. Systematically destroying ancient cities erased this country’s history.

The *-ing* nominalizing affix is characterized by sensitivity to the inner aspect of the base, as shown by Alexiadou et al. (2010) in line with Borer (2005): it selects atelic bases, but does not encode Aspect by itself. As a result of its nominal internal properties, it is expected to allow plural, which indeed it does, under certain conditions (the inner – inherited Aspect has to be specified as +bounded, i.e. telic; I return to this issue below).

- (7) a. I heard of repeated killings of unarmed civilians  
 b. \*the repeated fallings of the stock prices

The nominal status of the *ing-of* Gerund has been captured in the literature by including an n-head: hence, *-ing* counts as a categorizing head that gives a nominal status to a verbal projection. In the other types of gerunds that have more verbal properties, *-ing* competes for an inflectional status, the best candidate for which is (imperfective) Aspect<sup>4</sup>. However, the well-known differences between the classes of gerunds also interfere with categorization.

The assumptions above suggest that in nominal gerunds an n (therefore Class, see below) layer is present, while this layer is absent from the verbal gerund. Borer mentions the idea of having a “nominalizing *-ing*”. This form has full nominal properties, including adjectival modification and the combination with a definite determiner.

However, the other two types of gerunds are also DPs, as shown by their nominal distribution (see Cornilescu 2003): they may appear in argument positions, can be topicalized, etc. It is a standard assumption in the literature that they contain a “silent D”, and that a nominal Agr category assigns Genitive/Possessive case to the subject, or, in the case of Acc-*ing*, a non-finite Infl assigns Accusative to the same position. But they are dominated by a D layer, which is the default nominalizing strategy in English. No

<sup>4</sup> This does not mean, of course, that English Gerunds are always imperfective. Clausal gerundial adjuncts, in fact, do not have aspectual properties; note also that I do not take *-ing* to be the proper mark of progressive, and I leave aside here an overall investigation of all the instances of *-ing* morphology (see Cornilescu 2003).

nominal classification is present, hence Number is never allowed, explaining the contrast between verbal and (some of the) nominal gerunds on this point.

Gerund DPs in English thus illustrate two nominalization strategies: one uses D as a nominalizer, and has more verbal properties, the second uses a true nominalizer *-ing*, and has nominal properties. One might assume that *-ing* is associated to a classifier layer in the nominal (*-ing-of*) gerund, but to an inflectional layer (Agr or Asp) in the other gerundial forms. We will see in the next section that the projection of n/Class distinguishes between two available strategies for nominalization in Romance.

## 2.2. Romance nominalizations and the presence of Class

Diagnostics for Class seem to be straightforward in Romance nominalizations, as they are usually derived by nominalizing affixes. Taking the class of AS-Ns, for instance *-ation*, *-ment*, *-age*, *-ée* nominals in French, variation in Number adjectival modification attest for the presence of nominal layers. The specific affixes introduce gender specification, reflected in agreement on the determiner.

- (8) a. les destructions systématiques de quartiers populaires  
 the destructions systematic-PL of neighbourhoods popular  
 (afin d'ériger des tours staliniennes)  
 (for to raise INDEF towers Stalinist)
- b. les désamorçages de bombes lourdes par des recrues  
 the defusing-PL of bombs heavy by INDEF recruits
- c. les traversées fréquentes de cette rivière par des  
 the crossings frequent of this river by INDEF  
 nageurs téméraires  
 swimmers brave

Romanian *-re* nominalizations (historically related to Latin infinitive in *-re*, which is the reason we conventionally gloss them Inf but they are purely derivational affixed nominalizations), which demonstrate a productive pattern creating AS-Ns of all syntactic and aspectual verb bases, show similar behavior (see Iordachioaia and Soare 2008 among others):

- (9) demiterile succesive ale preşedintelui pentru a proteja anumite  
 demissions successive-PL of president-GEN for to protect certain  
 interese  
 interests

In support of the presence of n, Iordăchioaia and Soare (2008) point out that these nominalizations trigger regular NP-anaphora (as opposed to sentential anaphora) – (10a), and display case declension (overt in Romanian) – (10b). Their fully nominal status is therefore doubtless. In addition, it is clear that the *-re* affix deriving them is an unambiguous nominalizer.

- (10) a. Demiterea președintelui a fost un subiect actual în ultimele  
 demission president-GEN has been a issue current in last-the  
 luni; într-adevăr, toate paginile ziarelor erau  
 months indeed all pages-the newspapers-the.GEN were  
 acaparate de ea/ \*asta.  
 seized by her/ it  
 ‘President’s demission has been a current issue during the last months;  
 the pages of all newspapers were indeed invaded by it.’
- b. Pădurile au fost distruse din cauza tăierii.  
 forests-the have been destroyed by cause cut-INF-the.GEN  
 copacilor  
 trees-the.GEN  
 ‘Forests have been destroyed with deforestation.’

Unlike the nominalized infinitive, the Romanian supine nominal lacks a Class layer, as diagnosed by its opposite properties: adverbial modification, lack of nominal properties like Number, Case, and sentential anaphora.

- (11) a. \*arestaturile succesive ale jurnaliștilor  
 arrest-SUP-PL successive of journalists  
 b. arestatul constant al jurnaliștilor de către mafia politică  
 arrests-SUP constantly of journalists by Mafia political
- (12) a. \*pădurile au fost distruse datorită tăiatului copacilor  
 forests-the have been destroyed because cutting-GEN trees-the.GEN  
 b. tăiatul copacilor a distrus pădurile  
 cutting-SUP trees-the.GEN has destroyed forests-the
- (13) S- a interzis tăiatul copacilor. Într-adevăr, \*el/asta  
 SE has forbidden cutting-the trees-the.GEN indeed he/it  
 a adus pădurile românești într-o situație critică  
 has brought forests-the Romanian in a situation critical  
 ‘The cutting of trees has been forbidden. Indeed, this has caused Romanian  
 forests to be in a critical situation.’

The overview of nominal properties presented above allows us to distinguish between affixes that unambiguously trigger nominal categorization (*-ation*, *-age*, *-ment*, *-e(u)r*, *-re*, etc), affixes like *-ing* that may be categorizers but are not always so, and the supine stem which never introduces nominal categorization by itself<sup>5</sup>. Correspondingly, then, one has to distinguish two classes of AS-Ns, namely affix-derived (and probably zero-derived) nominals, that have argument structure and Aktionsart, from what one could call inflected derived nominals, that have both but no nominal layers, and in turn

<sup>5</sup> In support of this, I note in line with the literature (Iordăchioaia and Soare 2008, etc.) that adverbial modification is possible, and we will see in the next section that the supine stem conveys grammatical aspectual information. The supine nominal is never ambiguous between a result/referential meaning (it is not a R-N), as opposed to all the other types of nominals cited above, including the nominal *-ing*.

are able to project grammatical aspect. In the next section, I will discuss the idea of a tight correlation between the absence of Number (and accordingly the absence of *n*) and the projection of grammatical aspect.

### 3. Grammatical Aspect in nominalizations

#### 3.1. Why grammatical Aspect

Recall that the starting point of this paper is the correlation between aspectual properties in nominalizations and Number inflection. As Mourelatos (1978) puts it, telicity is one property that allows realization of plural morphology in event nominals. Telicity is but a realization of boundedness in the verbal domain; boundedness, in turn, is a condition for counting, as shown by the behavior of mass nouns (cf. *\*a sand/a piece of wood*, etc). One has on a par atelicity and mass nominals – and on the other, telicity and count nominals. However, as recently shown by Iordăchioaia and Soare (2008), Alexiadou et al. (2010) for Romanian and a number of other languages, and Martin (2010) and Knittel (2011) for French, lexical aspectual distinctions are orthogonal to the presence of number inflection, as morphological plural in event nominals is possible with both telic and atelic predicates: activities, accomplishments, and achievements as well:

- (14) a. Les lavages répétés de la chemise n' ont pas donné  
the washings repeated of the shirt not have not given  
un résultat satisfaisant  
a result satisfying
- b. Plimbările timp de ore în şir pe malul lacului  
walkings-the time of hours in row on shore-the lake-the.GEN  
l- au obosit  
him have tired
- (15) a. Les démolitions fréquentes de quartiers populaires...  
the demolitions frequent-PL of quarters popular-PL
- b. Demolările repetate ale cartierelor populare au compromis  
demolitions repeated of quarters popular-PL have compromised  
orice plan de urbanism  
any plan of urbanism
- (16) a. Ses arrivées en retard n' ont pas passé inaperçues  
his arrivals in delay not have not passed unobserved
- b. Sosirile repetate în întârziere la serviciu  
arrivals-the repeated in delay at work

More importantly, in the case of the Romanian supine nominals, which according to Cornilescu (2001) is atelic, we find also telic verbal bases:



- (17) demolatul monumentelor istorice pentru a construi blocuri  
 demolish-SUP-the monuments-GEN historical for to build blocks  
 de locuințe  
 of housing

Another proposal that has been put forward (for Romanian in the first place, see Iordăchioaia and Soare (2008), Alexiadou et al. (2010) is that of a grammatical aspectual projection that would block the projection of morphological number. The distinction between lexical (or inner) and grammatical (or outer) aspect that I endorse here goes as presented in Borer (2005), who sheds some light on this domain affected by significant terminological confusion. I assume that inner aspect is the aspect that characterizes the verbal low projection, and is directly connected to the presence of arguments, i.e. distinctions in terms of (a)telicity (Aktionsart). Borer (2005) presents a view in which this type of aspect is also “syntactic”, i.e. sensitive to the cardinality of the object, in the case of telicity (her AspQ). She also discusses the distinction between Slavic primary and secondary imperfectives. The first are bare stems, by default imperfective (and Borer suggests that they convey atelicity), and the latter are suffix-derived forms on the prefixed perfective form. Secondary imperfectives, Borer assumes, are realizations of outer/grammatical aspect, and introduce a morphological distinction. If one follows the idea of a grammatical aspectual opposition in deverbal nominals, it is this kind of morphological distinction that one has to identify.

Interpretive differences that show up in productive pairs of nominalizations like Romanian infinitive and supine nominals, reviewed in the next section, very much suggest aspectual oppositions of the paradigmatic type. Moreover, forms as the supine nominal and the English gerund are indeed aspectually marked and introduce a systematic aspectual value (imperfective/habitual/iterative), which is also a hallmark of aspectual grammatical values.

### 3.2. Identifying the projection of grammatical Aspect in nominalizations

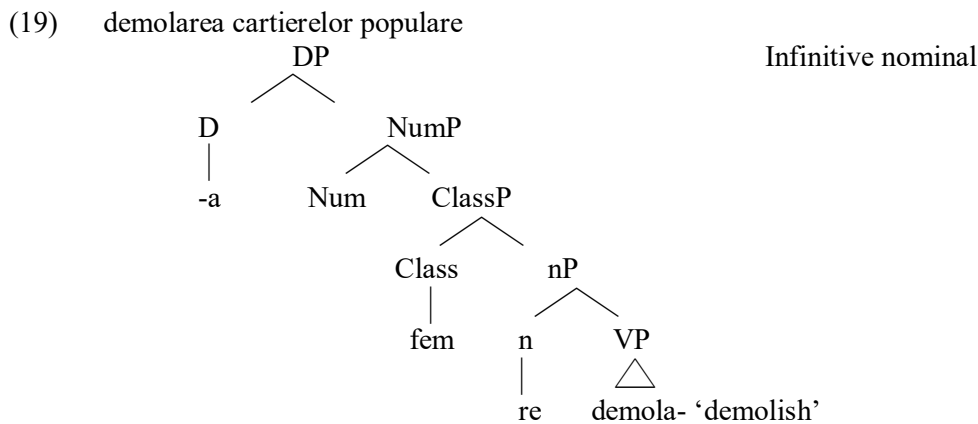
I argue that inasmuch as grammatical/outer aspect may be present in nominalizations, it has to instantiate the type of morphological distinction mentioned above, even if not necessarily overtly marked. What we are looking for across languages, then, is a specialization in terms of aspectual distinctions, instantiated in dedicated derived forms. The purpose of this section is to look at some of such cases, which naturally lead to the idea that those languages “grammaticalize” aspectual properties in nominalizations. This is particularly clear in Romanian, where a fully productive pair, the infinitive and the supine nominalizations, are clearly distinguished by their aspectual properties.

#### 3.2.1 Romanian

The Romanian infinitive nominal does not change the value of the verbal base but is sensitive to its properties, and by and large selects telic bases, as already demonstrated by Cornilescu (2001).

- (18) a. cartierul a fost demolat în trei zile  
 quarter-the has been demolished in three days  
 b. demolarea cartierului în trei zile  
 demolition-INF-the quarter-the.Gen in three days

Telicity in the nominal brings in a [+bounded] feature that percolates to the layer of Class [+count] (see above) – responsible for the projection of Number. The infinitive nominal thus has a fully nominal structure as in (19), proposed by Iordachioaia and Soare (2008) and Alexiadou et al (2010):



In the above representation, no grammatical aspectual layer is projected; only inner aspect is present. Following Picallo (2006), Class[Gender] specifications feed the projection of Number. Hence the infinitive nominal is assigned an analysis in terms of a fully nominal projection, embedding only whatever verbal layers are necessary to build up argument structure and telicity. Here, and in the structures proposed in Iordăchioaia and Soare (2008, 2009), Alexiadou et al. (2010), these layers are subsumed by VP, but nothing prevents including further verbal layers responsible for Voice, for instance<sup>6</sup>.

The supine nominal, in turn, does change the value of the verbal base, introducing an iterative or habitual reading (see Iordăchioaia and Soare 2008, Alexiadou et al. 2010 for more details). This is visible in combination with achievements verbal bases in (20) which take habitual readings in the supine. Some stative bases (21), normally ungrammatical in the supine, become grammatical if first made [+bound] by adding a modifier like *until* PPs.

- (20) sositul lui Ion cu întârziere la toate întâlnirile importante  
 arrive-SUP-the the.GEN Ion with delay at all meetings important  
 ‘Ion’s (habit of) arriving late at all important meetings’

<sup>6</sup> If one adopts for instance a view like the one adopted in Borer (2005), the structure would include layers like EvP and Asp-QP, which in her system built up telicity in a syntactic fashion. I do not discuss these theoretical issues here; note simply that her EvP is not outer Aspect in the terms discussed here. And see section 4 for a more detailed, unifying proposal.

- (21) statul lui Ion la Maria / dormitul lui Ion \*(până  
 stay-SUP-the the.GEN Ion at Maria / sleep-SUP-the the.GEN Ion until  
 după-amiaza târziu)  
 afternoon late  
 ‘Ion’s (habit of) staying at Maria’s/sleeping until late in the afternoon’

On the other hand, the data indicate positive diagnostics for pluractionality, which is arguably hosted by outer Aspect. For instance, the supine exhibits distributivity effects with plurals, a property of typical pluractional operators documented in polysynthetic languages (van Geenhoven 2004, Laca 2006)<sup>7</sup>:

- (22) ucisul jurnaliștilor / \*jurnalistului de către mafia politică  
 kill-SUP-the journalists-GEN / journalist-the-GEN by to Mafia political  
 ‘the killing of journalists/\*the journalist by the political Mafia’

Because it introduces aspectual shift, the supine contributes an aspectual value in the inflectional domain. As a consequence, the analysis proposed in Alexiadou et al. (2010) is the one in (23), where an AspP is projected in the inflectional domain of the nominal projection, below D:

- (23) demolatul cartierelor populare Supine nominal
- 
- ```

    graph TD
      DP --> D["D  
-ul"]
      DP --> AspP
      AspP --> Asp["Asp  
at"]
      AspP --> vP
      vP --> v
      vP --> VP
      VP --> Triangle["△"]
      VP --> Stem["demol-"]
    
```

Difference in modification is clearly in favor of an analysis based on two nominalizations patterns: infinitive nominals seem to differ from supine nominals in not allowing adverbs (see Iordăchioaia and Soare 2008). In (24a), adjectival modification with feminine agreement in the infinitive has a free order, and more importantly can appear in the upper nominal domain – whereas only adverbial modifiers in the verbal domain (Asp-VP) are available in the supine (24b):

<sup>7</sup> For convenience, here are van Geenhoven’s (2004) examples from Greenlandic, illustrating the effect:

- (i) ?Qaartartoq sivisuumik qaaqattaarpoq.  
 bomb.ABS.SG lengthy.INS explode.again.and.again.IND.ITR.3SG  
 ‘?A bomb exploded again and again for a long time.’
- (ii) Qaartartut sivisuumik qaaqattaarput.  
 bombs.ABS.PL lengthy.INS explode.again.and.again.IND.ITR.3PL  
 ‘Bombs exploded again and again for a long time.’

- (24) a.      atenta        studiere    a datelor / studierea    atentă  
           attentive-the study-INF of data-GEN / study-INF-the attentive  
           a datelor  
           of data-the.GEN
- b.      \*atentul        studiat     al datelor / studiatul     atent  
           attentive-the study-SUP of data-the.GEN / study-SUP-the attentive  
           al datelor<sup>8</sup>  
           of data.GEN

To conclude, only the supine nominal projects an aspectual layer, which is genuine verbal morphology inherited in the nominal structure, thus a sentential nominalization, and not an affix-based one. It offers a criterion for distinguishing grammatical aspect in the nominal domain, and behaves on a par with sentences in allowing adverbs and triggering aspectual shift; we can conclude that grammatical Aspect is marked in this nominal, even if there is no specific morphology.

One can thus distinguish, on this ground, between n-nominalizations and D-nominalizations (see also Iordachioaia 2014), the first fully nominal, but built on top of verbal projections, the second involving outer-aspectual inflection, thus receives more empirical support. Inflected AS-Ns are default (D)-derived AS-Ns, like the Romanian supine and the English gerund, that involve no nominalizer but a combination between D and an outer AspP.

As a working definition, I assume here that outer Aspect is an inflectional layer which always changes the aspectual value of the VP. Thus, as already mentioned above, (im)perfectivity is a morphological notion (see Borer 2005, vol II: 6: fn. 34), it has always a morphological instantiation, either by a specific affix, or by a specialized stem. Outer Aspect is conditioned by (overt or covert) verbal inflectional material.

Note that, in general, it is not an expected situation to have an n layer projected over a verbal inflectional layer. Indeed, in languages where one can nominalize CPs and TPs (for instance, Greek and Turkish), no derivational affix bearing the category n can appear on top of such projections. They are not expected to appear on top of (im)perfective outer Aspect. What Romanian and English offer seems to respect this general principle of what we can call, “domain integrity of extended projections”.

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<sup>8</sup> In more support for the adverbial status of the supine’ modifier, we can find examples in which the adjectival and the adverbial forms are not homophonous – like the manner adverb in (i). In some cases, both the adverb and the adjective are ok, as in (ii), with so-called ‘thematic adjectives’.

- (i)      corectatul        tezelor        bine/\*bun  
           grading-SUP-the assessments-GEN well/good  
           ‘grading the assessments well’
- (ii)     împărțitul        frățește/    frățesc        al averii  
           sharing-SUP-the brotherly/ in a brotherly way of wealth  
           ‘sharing the wealth brotherly/ in a brotherly way’

### 3.2.2 Slavic

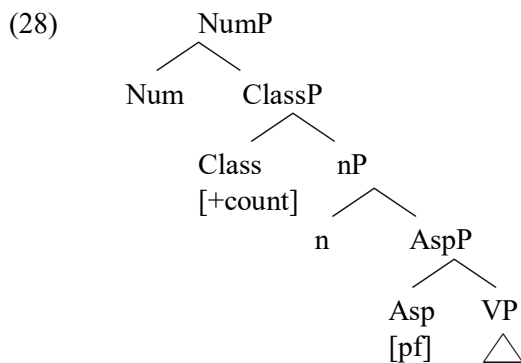
A complication appears, however, when one looks at Slavic. There, co-occurrence of Number and Aspect appears possible, provided that a class/nP layer is projected above AspP, as Alexiadou et al. (2010) show for Polish nominalizations, which project aspect as shown by the following pairs:

- (25) a. Jan przeczytał/\*czytał gazetę w dwie godziny.  
 Jan read.PF / read.IMPF newspaper in two hours  
 ‘Jan read the newspaper in two hours.’  
 b. Jan czytał /\*przeczytał gazetę przez dwie godziny.  
 Jan read.IMPF/read.PF newspaper for two hours  
 ‘Jan read newspapers for two hours.’
- (26) a. przeczyta-nie/\*czyta-nie gazety w dwie godziny  
 read.PF-NIE /read.IMPF-NIE newspaper.GEN in two hours  
 b. czyta-nie /\*przeczyta-nie gazety przez dwie godziny  
 read.IMPF-NIE /read.PF-NIE newspaper.GEN for two hours

They nevertheless allow morphological plural, cf. (27). However, this is possible only with perfective, thus [+bounded] forms of the nominalization. Imperfective counterparts are ruled out in presence of plural morphology.

- (27) a. częste opóźnione przyby-cia/ odejś-cia pociągu  
 frequent delayed arrive.PF-CIE.PL/depart.PF-CIE.PL train.GEN  
 b. \*częste opóźnione przybywania/ odjeżdżania pociągu  
 frequent delayed arrive.IMPF-NIE.PL/depart.IMPF-NIE.PL train.GEN

Polish perfective nominalizations can thus be analyzed as in (28) below. The overall make-up of the projection is a nominal one (i.e. involving Class and NumP, responsible for plural and adjectival modification). A concord mechanism ensures the match in boundedness specifications between the different layers: with a perfective AspP projection, the [+bounded] specification allows [+count] Class. In this case, it looks that in Polish, a nominalizing affix may be compatible with a lower Asp projection.



If the system proposed by Alexiadou et al. (2010) is completely coherent in terms of the constraints on the projection of Number and its relation with aspectual specifications in the structure below, it still raises a problem if we want to maintain that outer Aspect is a morphological – inflectional category, and should not be available in n-nominalizations (i.e. nominalizations involving pure nominalizers). As I have pointed out above, if outer Aspect is a grammatical, morphological category – a verbal inflectional layer –, it is not expected to be nominalized by affixation but only by combination with a determiner (or D-nominalization as termed above). Why is it then that the Polish nominalizations above may allow the projection of a n/Class layer on top of outer Aspect?

Borer (2005) suggests that, contra Filip (2003), perfective aspect is not grammatical aspect in Slavic, but telicity – in her terms quantity Aspect. If this is so, perfective Polish nominalizations are not a problem anymore, as there would be no outer Aspect projection in those nominalizations that allow plural. Still, the idea of an AspP projection below n remains problematic in the case of imperfective nominalizations, which, while not allowing morphological plural, admit adjectival modification indicating nominal projections.

### 3.3. French deverbal nominals in *-age* and *-ée* : further challenges

This seems to be exactly the situation illustrated by some French deverbal process nominals, according to some studies. Having investigated pairs of *-age/-ée* nominals in French, Ferret et al (2010) put forward the idea that they convey grammatical aspect information (see also Haas 2011 for similar ideas). They base their conclusion on the fact that when built on the same base, these affixes seem to be correlated to two ways of “conceptualizing events”, namely as ongoing vs. whole eventuality. However, in this corpus-based work, the morphological and lexical-semantic properties are favored to the detriment of syntactic tests, and the general proposal does not receive strong empirical support. In what follows, I look in more detail at these pairs, in order to shed a different light on the data, and propose a new syntactic analysis. French data are important inasmuch as they allow us to investigate the puzzling situation of aspectual distinctions in presence of derivational n-suffixes, and moreover, in a language in which aspectual morphology is instantiated by verbal inflection.

Let me begin by setting the scene properly. Recall that here SENs are to be excluded (see footnote 1); only ASNs are expected to project grammatical eventive structure, correlated with the presence of arguments, according to Grimshaw’s (1990), and see also Roy and Soare (2013). This is obvious in the following pairs, where the absence of the arguments combined with aspectual PP-modifiers (to activate the event structure) leads to ungrammaticality:

- (29) a. Le lavage \*(de a chemise) pendant des heures/  
 the washing (of the shirt) during INDEF hours/  
 en trois minutes  
 in three minutes
- b. la traversée \*(de la Manche) en quelques heures  
 the crossing (of the English Channel) in a few hours

In order to identify the relevant class of nominals, we must apply relevant tests, like *in/for* PPs, compatibility with *frequent* modifiers in the singular, and the presence of *by*-phrases, the first being taken to identify the presence of complex event structure and aspectual information. As made clear in Roy and Soare (2013), eventive denotation is not sufficient for the presence of a grammatical event (and grammatical event structure, in turn, is always present in nominalizations that project grammatical Aspect). Compatibility with the context of *last x time* predicates, or the contexts of PPs like *during the x*, *after the x*, invoked in the lexical-semantic literature (see Haas et al. 2008 among others) does not identify the kind of (grammatical) eventive-aspectual properties that I am looking for in the present paper, but merely tests for some properties of the conceptual events denoted by the (sometimes underived) nominal.

- (30) a. le lavage /le film a duré des heures (undetermined, SEN)  
 the washing/the movie has lasted INDEF hours
- b. le lavage de la chemise par des tailleuses chinoises  
 the washing of the shirt by INDEF seamstress Chinese  
 pendant des heures (AS-N)  
 during indef hours

PP-modifiers are often considered a typical diagnostic for the presence of aspectual information, as they obviously test the telic/atelic aspectual value of the VP. It has recently been proposed (Borer 2005, Iordăchioaia and Soare 2008, 2009) that *for*-PPs identify outer Asp, while *in*-PPs identify telic inner Asp. I will adopt here the more traditional position according to which both PPs identify lower aspectual projections, atelic and telic, respectively. For the rest, I will stick to the view, presented above for Romanian nominalizations, that not all AS-Ns (i.e. not all nominals that inherit a grammatical event identified by PP-modifiers) project grammatical Aspect, but only those that introduce aspectual shift. Co-occurrence of both types of PP, however, indicates the existence of aspectual shift, which in turn warrants the projection of outer Aspect (see de Swart 1998).

Another test for the existence of outer aspect information, I assume, besides checking the effects of the morphology on the lexical aspect of the VP (i.e. aspectual shift), is the availability of adverbial modification, see section 2 above. The Romanian supine nominal, the English verbal gerund and the Spanish verbal nominalized infinitive are candidates for this verbal pattern of nominalizations (see Alexiadou et al. 2010 for an overview).

Let me now discuss some of the main arguments put forward by Ferret et al (2010) in identifying grammatical aspect in *-age/-ée* pairs. Such are the context of prepositions like *after* (that work for *-ée* nominals, supposedly perfective, but not for *-age*, supposedly imperfective), and the compatibility with predicates like *be interrupted*, only possible with imperfective *-age* nominals.

- (31) a. ??après l' arrivage de la marchandise / après l' arrivée de la  
 after the arriving of the merchandise / after the arrival of the  
 marchandise  
 marchandise  
 b. après être arrivée, la marchandise a été vendue  
 after be arrived, the merchandise has been sold
- (32) a. l' arrivage des ouvriers a été interrompu par la police  
 the arriving of-the workers has been interrupted by the police  
 b. \*l' arrivée des ouvriers a été interrompue par la police  
 the arrival of-the workers has been interrupted by the police

These kinds of contexts, however, do not identify the presence of a grammatical event structure. (Im)perfective aspect cannot be present in nominals like *film* 'movie' (*le film a été interrompu* 'the movie has been interrupted'; *ils ont discuté après le film* 'they have discussed after the movie'), that are unmarked for aspect and correlatively lack any complex event structure<sup>9</sup>. I make the case that they are exactly like *last x time* predicates, in only selecting conceptual events as arguments, and highlighting the boundaries of the event denoted by the nominal. But crucially, this is not a reliable test for the presence of grammatical aspect.

The presence of PP-modifiers attests to argument structure inheritance and Aktionsart (telicity – cf. 33). In turn, adverbial modification is strictly impossible (cf. 34), again rendering the presence of grammatical aspect questionable.

- (33) a. le lavage de la chemise pendant des heures  
 the washing of the shirt during of hours  
 b. l' atterrissage de l' avion en quelques minutes  
 the landing of the plane in a few minutes
- (34) a. \*le lavage continuellement de la chemise  
 the washing continuously of the shirt  
 b. \*l' atterrissage de l' avion soigneusement  
 the landing of the plane carefully

Ferret et al also argue that *-age* nominals give rise to pluractionality effects, as a manifestation of their aspectual imperfective value.

- (35) a. \*l' arrivage d' un légume /✓des légumes, de la marchandise  
 the arriving of a vegetable / of vegetables, of the merchandise  
 b. \*le tuage d' une mouche /✓de mouches  
 the killing of a fly / of flies

<sup>9</sup> The compatibility with this type of modifiers is simply due to their denoting a conceptual event which has a duration and is limited in time. Again, this crucially suggests the lack of grammatical-internal properties of this kind of nominal.



Recall that this has been argued also for the supine (see above) in support of a grammatical aspectual value introduced in AspP by a pluractional operator. The examples in (35) come in validation of one of the tests that I consider relevant here for grammatical aspect, as they illustrate a shift of the aspectual value of the base predicate.

In support of a more verb-like structure, *-age* deverbal nominalizations (among others) have been argued to behave akin Romanian supine with respect to anaphora (see Knittel 2011), indicating a more verbal structure. The lack of number would follow from this behavior.

- (36) a. Le désamorçage des bombes par les recrues n’ a pas été  
 the defusing of bombs by the recruits not has not been  
 approuvé; en effet, ça/\*il avait eu des conséquences désastreuses  
 approved; indeed, it / he had had some consequences disastrous  
 dans le passé.  
 in the past
- b. ?Les destructions systématiques ... en effet, elles ont compromis  
 the destructions systematic indeed, they have compromised  
 le plan d’ urbanisme  
 the plan of urbanism

Despite this, it is clear that these nominalizations have nominal properties, inasmuch Gender and adjectival modification are always present<sup>10</sup>. Moreover, number is never clearly excluded, as we have seen above, but seems to depend on lexical aspect specification (unboundedness). Should these deverbal nominals show finer-grained distinctions in terms of verbal/nominal properties, they nevertheless clearly include a Class layer.

Moreover, unlike in the case of the supine, the aspectual (pluractional) effects in French are far from systematic; Ferret et al (2010) point out that the effect shows up only in the case of morphological pairs. When looking separately at the two affixes, one finds that there are contexts in which the aspectual shift is not triggered. So, in a syntactic approach, we have at least to assume that *-age* and *-ée* derived nominals have more than one structure, while the supine formation is unambiguous.

Note also that as far as *-age* is concerned, the ambiguity between the complex event reading and the result reading is compulsory. In addition, this affix also combines with non-verbal bases; in these, the semantic effect triggered is something like a collection, sum or group – see (37) below:

- (37) branchage, feuillage, vitrage<sup>11</sup>

<sup>10</sup> Knittel (2011) argues that adjectival modification is restricted in *-age* nominals. However, I suggest that it is not the internal structure of *-age* nominals that blocks adjectival modification, but their overall (in this case, generic) interpretation (cf. \**j’ai fait du jardinage difficile* ‘I made difficult gardening’).

<sup>11</sup> See also Cohen and Zribi-Hertz (2012). I suggest that the same type of interpretation is involved in so-called instrument *-age* nominals like *chauffage*, *allumage*, which denote a collection of pieces representing a device with a certain function (see Ferret and Villoing 2014, 2015).

It has been assumed that event nominals in general often behave like mass; however, what we seem to have here is not a simple similarity but mass semantics (brought by the suffix), combined with an eventive base.

As pointed out above, I assume that grammatical aspect, manifested by (im)perfectivity, is a morphological matter. It is so in Slavic, even though the combination of derivational and inflectional affixes (and the status of each) needs more investigation. It is not in French nominals, where we have mere derivational affixes with [+/-count] specifications.

Hence, *-age/-ée* nominals in French may definitely be analyzed as AS-Ns that convey (im)perfective aspectual entailments; however these are not structure-related and cannot be assigned an inflectional status, i.e. a genuine grammatical aspectual value. They surely involve verbal layers; but only layers that are responsible for the inheritance of argument structure (EvP/Asp-QP in Borer (2005) or various types of Voice/vP in other frameworks – DM or nanosyntax). Aspectual entailments of perfectivity/imperfectivity are induced through +/-count specifications at the level of the Class.

In turn, grammatical aspect layers are inflectional, thus they cannot appear above nominal projections. Indeed, inflected forms cannot be further derived, as frequently pointed out in the literature. Hence the ungrammaticality *\*walkingation*, etc. – see for instance Borer (2005). Moreover, as pointed out above, sentential nominalizations across languages (e.g. Greek, Turkish or Malagassy), are never affix-derived, and therefore may involve inflectional sentential categories up to Tense. The sentential pattern of nominalization involves a D layer only, on top of CP/TP levels.

#### 4. Towards a system of aspect in nominalizations.

In what follows, I turn to a comparison between the Polish and the French systems and show that they are not alike. Polish nominalizations are D-nominalizations (where D stands for default, since there is no overt D in the structure<sup>12</sup>); they are syntactic in the classical sense, and affixation counts as “grammatical” or maybe “superlexical” in the sense of Romanova (2004), Svenonius (2004); or analogously in the current proposal, it contains verbal classifying layers.

French *-age/-ée* nominals, in turn, are derivational nominalizations, they bear gender features, [+/-bounded] specifications in their classifying system, which is nominal and determines nominal projections above. In certain conditions, a particular combination of these features may trigger pluractional – imperfective entailment.

##### 4.1. More on the Slavic pattern

Slavic has separate morphological markers for n/Class and for Aspect. In the following, I review some of the main recent developments in the treatment of Slavic aspectually-marked stems. Specifically, the split between outer and inner Aspect is still

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<sup>12</sup> Of course, the idea of an empty D in the structure of Slavic nominalizations can also be explored (see Caruso 2012).

unclear in the literature. I propose to give room to these in-between aspectual markers, and place them in a verbal Class layer, as has been suggested by Janda (2013). Perfective markers may thus appear below *n* without problems for the analysis.

Another peculiarity of Slavic nominal system is the lack of (overt) D. Without going into a discussion of this point here, I suggest that adding a Class layer is the default strategy of nominalization in Slavic, in the absence of D (but see footnote 12). Hence, a secondary (outer) imperfective AspP will be selected by a default [–count, –Gender] classifier that will not allow the projection of NumP. The existence of both Class and Asp layers are reflected in the morphology of the nominalization.

One could suggest that for Slavic, the unavailability of a D-nominalizing strategy (unlike in Romance and English), makes *n*-nominalization the unique default nominalizing strategy. In this case, *n* could combine with an outer Asp projection (which, crucially, can only be imperfective aspect in Slavic), and project by default a nominal classifier on top of AspP. Only neuter Gender and [–count] Class are a possible option, hence the mass behavior of the imperfective nominalizations in Polish, noted above.

In support of this idea, note that Polish nominalizations both have an aspect marker (a prefix or a suffix for perfective and imperfective aspect respectively), and a nominalizing layer. More serious problems would arise if a language in which nominalization is 100% derivational in its deverbal system were to introduce outer aspect specifications in deverbal nominals, while not having overt, unambiguous aspectual markers.

#### 4.2. French: event, but not aspectually marked ASN-s

The situation in French, I argue, is not the same, however. Even if the default nominalizing strategy is *n*-nominalization, in this case the projection of Asp is not grammaticalized in the deverbal system, but is induced by the selectional properties of the *n* layer.

The gender-marked French affixes are unambiguous nominalizing affixes, but they may appear on top of several types of structure. This means that *-age* and *-ée* nominals (and probably others) are ambiguous between three patterns:

- (i) SENs, in which case they of course allow pluralization (DP>NumP>NP>RootP)
- (ii) AS-Ns embedding an unbounded AspP under *n* (a verbal classifier level)
- (iii) AS-Ns embedding a bounded AspP under *n*, in which case they may pluralize, like marginal *ing*-of nominals and perfective Polish nominals

*-age*: neuter Gender, –count specification = unbounded Asp => imperfective entailment

*-ée*: feminine gender, +count specification = bounded Asp => perfective entailment

As we saw, French *-age* and *-ée* nominalizations are *n*-nominalizations. First of all, the presence of properties that have been demonstrated to diagnose grammatical aspect in nominalizations is conditioned to the presence of argument structure. From this point of view then, French nominals exhibit the well-documented ambiguity of nominals between SENs and CENs, unlike D-nominalizations which are unambiguous. Second, grammatical Aspect is not systematically present, which means that it is not contributed by the nominalizing affix. These affixes, in turn, contribute categorial specification together with other (aspect-sensitive) semantic information. What happens in *-age* (and probably *-ée*)

nominals is just that the nominalizing affix operates on the inner Aspect and inherits the value projected there, and provides an environment for entailments of (un)boundedness to appear, explaining the (conceptual) pluractionality in *-age* nominals. Another result is that Number may be projected, and has to match the feature specifications downwards.

### 5. Conclusions and open questions

This paper has shown that the map of aspectual properties in nominalizations is tightly connected to the type of nominalization pattern, conditioned on whether a genuine nominalizing affix is present or not. I have focused on some cases from Slavic in comparison to French and shown that the status of a ClassP may not be the same, and that a default “D” structure can be supposed for the Slavic nominalizations projecting Aspect, as well as for the Romanian Supine nominal, but not for the French deverbal nominals like those in *-age* and *-ée*.

Some questions of course remain open in this attempt to study the event structure of a series of nominalizations in several languages; for instance, the relation between nominal Class, verbal Class, and categorization, and the situation of a functional head Voice with respect to all these. It would also be interesting to further study the contribution of D, in order to determine if it is the same in all the cases where there is no overt nominalizing morphology.

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